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UNITED STATES PATENT OFFICE.

PHIL L. MABREY, OF COLUMBUS, OHIO.

LAUNDRY PREPARATION.

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To all whom it may concern:

Be it known that PHIL L. MABREY, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, has invented certain new and useful Improvements in Laundry Preparations, of which the following is a specification.

This invention relates to a new and useful souring preparation adapted for use primarily in commercial laundries for the purpose of neutralizing the effect of a preceding alkali bleaching bath, to which goods are subjected prior to their emerging in the acidic or souring bath; to remove stains and generally soften the goods or fabrics, to prevent injurious effects thereon by reason of the chemicals contained in the various baths to which the goods are subjected, and to render the said goods adaptable and capable of more readily receiving the intended effects of the subsequent blueing baths.

In steam laundries it is the common practice in the washing of fabrics to place the latter, after being initially washed by one or more soap baths, in a bath containing an alkali, usually chlorate of lime, for the purpose of bleaching and whitening generally the goods or fabrics so treated. Following this the goods are placed in an acidic bath, commonly known as a "sour" for the purpose of neutralizing the effects of the chlorate of lime, in order that the goods will be rendered softer and free from the rough, coarse or harsh effects produced therein by the remaining presence of the alkali. Also, the acidic bath is utilized to remove stains and other discolorations from the goods and to thereby more efficiently renovate the latter. In carrying out this purpose, acetic and oxalic acids are commonly utilized in imparting the necessary degree of acidity to this latter bath, however, it has been observed that the acetic acid alone does not have sufficient strength to remove fruit, iron, perspiration and other stains or discolorations from the goods, but can be merely employed for the purpose of counteracting the effects of the alkali. Oxalic acid, on the other hand by reason of its greater relative strength or activity is not only capable of neutralizing the effects of the lime but, also, effectively serves in removing the discolorations above noted and, therefore, laundries usually adopt the same for the purpose specified. However, the use, of oxalic acid while effective in the capacity stated nevertheless has a distinctly detrimental effect upon the goods treated therewith, inasmuch as such goods, when repeatedly subjected thereto and within a relatively short time becomes "burned," because of the fact that the oxalic acid is very difficult to remove from the goods, and by remaining therein causes their normal usefulness and life to be materially foreshortened.

The present invention, therefore, consists in the provision of a souring composition wherein oxalic acid is present, but in combined relationship with certain other materials, hereinafter specifically set forth, which serve to permit the ordinary beneficial results of said acid to be retained but, in addition, act to enable the said acid to be decomposed and used up entirely when employed in the presence of hot water, so that substantially none, or a negligible amount, of such acid will remain in the fabric treated therewith, and to thereby avoid undue disintegration or premature destruction of said fabrics.

To this end, I employ the following materials in substantially the proportions set forth:

Sodium silico fluoride, containing 58% fluorine	59%
Oxalic acid, powdered	25%
Alum, powdered	8%
Fine table salt	8%

These materials are assembled in bulk and are thoroughly mixed together, an efficient mechanical mixture being obtained by means of revolving brushes, which serve to combine and intermingle all of the ingredients so that the same may be uniformly distributed throughout the bulk of the combined materials thus produced. These materials when combined and mixed produce a relatively fine powdered mass, which may be placed in suitable containers for commercial handling, the sodium silico acting to hold the fluorine and to prevent it from being wasted, by reason of its volatility when the containers are being moved about.

The substance or composition produced by combining the materials set forth is, when actively used, adapted to be placed in hot water of substantially 190° Fah. in which the fabric is to be washed, ordinarily but substantially four ounces or even less of the composition being employed to approximately seventy-five pounds of goods to be

washed thereby. When placed in the hot water containing the goods the sodium silico fluoride assists the oxalic acid in securing a whitening of the goods and removal of stains therefrom without allowing the goods to be detrimentally effected by the acid. Also, by the use of the salt, the oxalic acid is broken up or decomposed and is used up entirely when employed in hot water, therefore, the same does not remain in the goods treated therewith after the washing process has been completed. By powdering the oxalic acid the same is enabled to dissolve and act simultaneously with the fluorine, in order that complete activity of both acids may be obtained substantially simultaneously. The alum also enables the setting of the blueing when the goods are subsequently treated to a separate blueing bath, and to reduce the amount of the blueing or other dye required in such latter bath. The salt not only acts to decompose the oxalic acid but serves to accelerate the liberation of fluorine from the sodium silico fluoride.

In view of the foregoing description, it will be apparent that the present invention provides a composition which will serve to enable commercial laundries to handle fabrics in such manner that while a thorough cleansing or renovation thereof will be effected, yet premature destruction of such fabrics, by reason of the chemicals in the various baths to which they are subjected, will be overcome, and consequently the said fabrics may be treated repeatedly and successively to such washing treatments without becoming unduly worn or injured by said chemicals. Furthermore, in my preparation it will only be necessary to employ substantially four ounces thereof to seventy-five pounds of goods treated, whereas when oxalic acid is employed alone at least six ounces thereof is necessitated. Therefore, the present invention not only saves the fabric, but may also be employed more economically for producing similar results than can oxalic acid. I of course realize that oxalic acid has been used as a part of previous washing compositions of this nature, but to the best of my knowledge oxalic acid has never been employed in such manner as to eliminate its injurious effects upon fabrics without minimizing its ordinary effectiveness and in the economical manner set forth. I therefore claim the material set forth in the formula above given, or their chemical equivalents, it being understood that the nomenclature applied to the several materials is of secondary importance, since various other chemical terms may be applied thereto without deviation from the real materials specified.

What is claimed is:

1. A souring composition for laundries, comprising an oxalic acid base, in combination with sodium silico fluoride and salt.

2. A laundry composition comprising sodium silico fluoride, in combination with oxalic acid, alum and salt.

In testimony whereof I affix my signature.

PHIL L. MABREY.